

FIG. 1 is a schematic diagram of a system 100 for processing an input signal. The system 100 includes a first processing unit 102, a second processing unit 110, and a third processing unit 112. The first processing unit 102 includes a first input port 104a, a first output port 104n, a first output port 105, and a first output port 106. The second processing unit 110 includes a first input port 116a, a first output port 116n, and a first output port 114. The third processing unit 112 includes a first input port 112a, a first output port 112n, and a first output port 112. The system 100 is configured to process an input signal and output a processed signal.

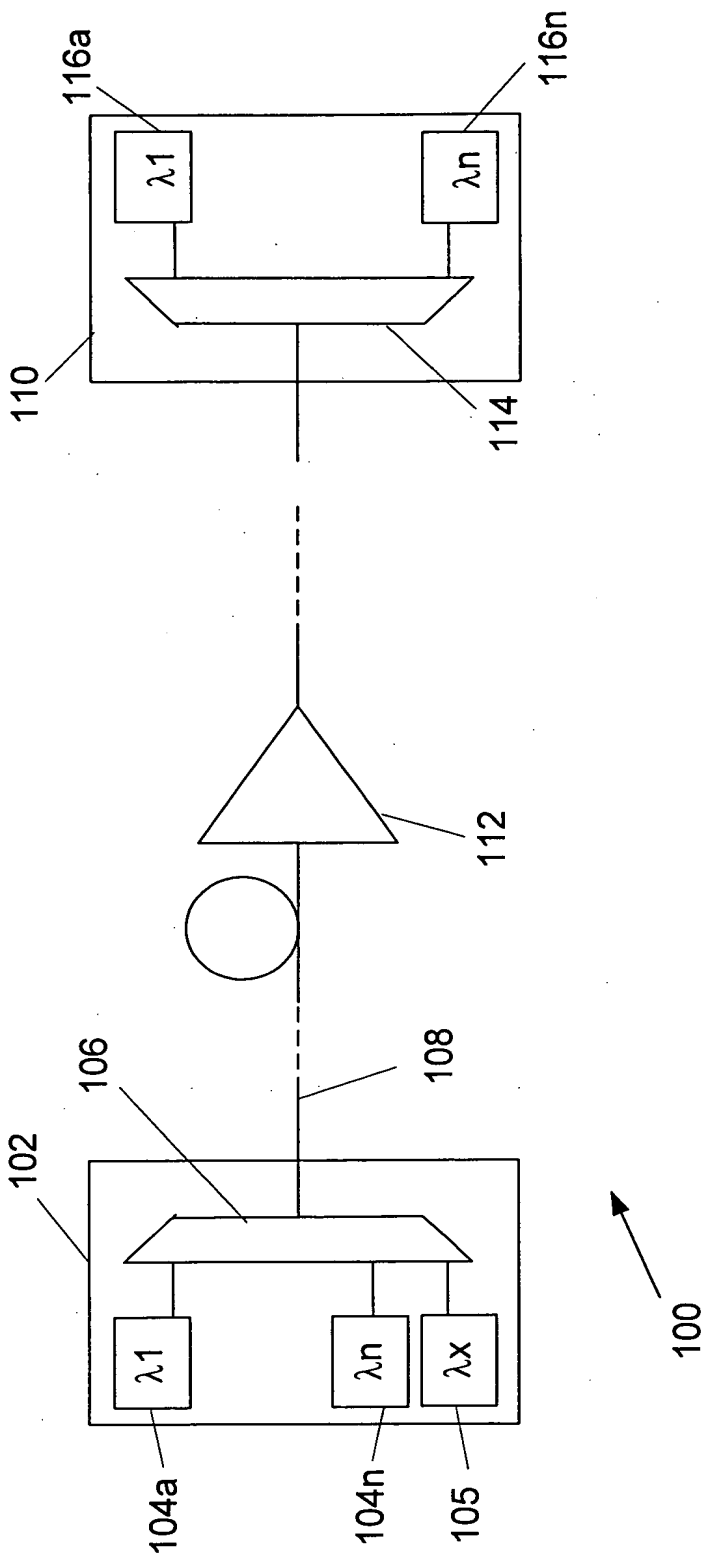


FIG. 1

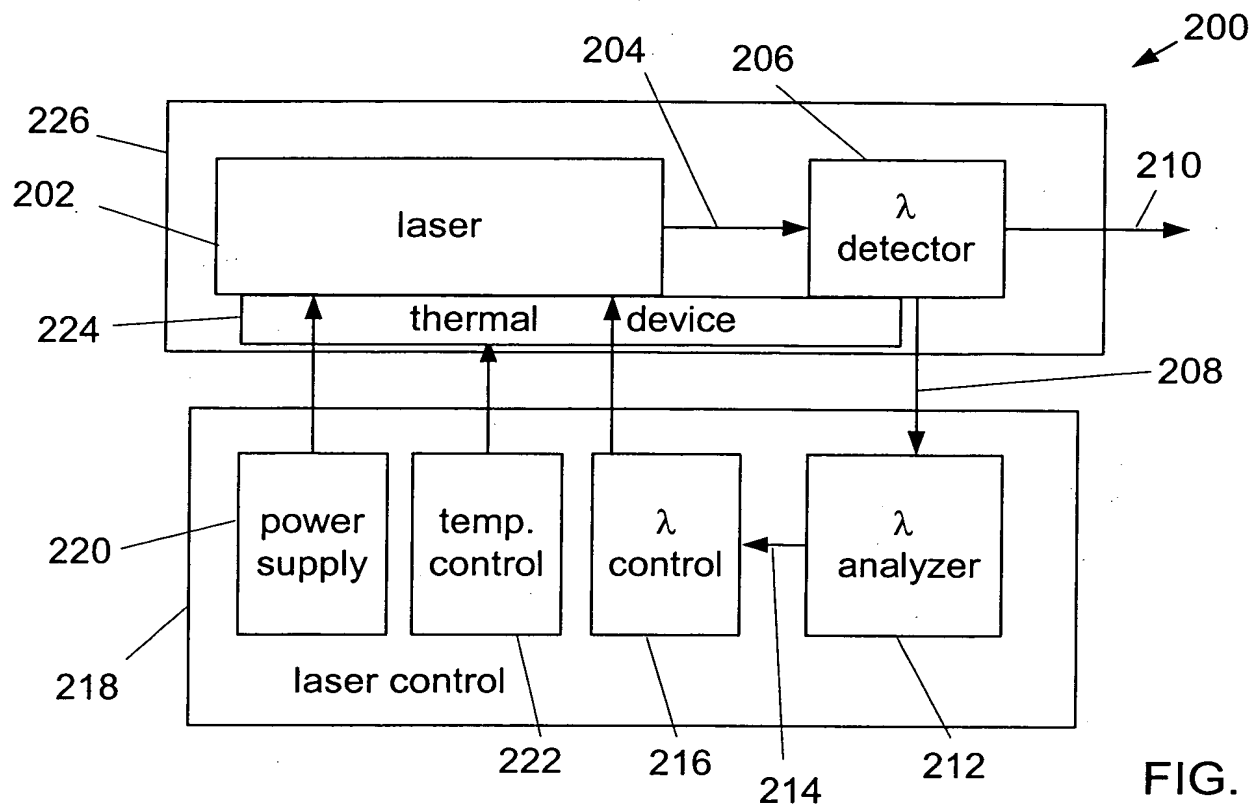


FIG. 2

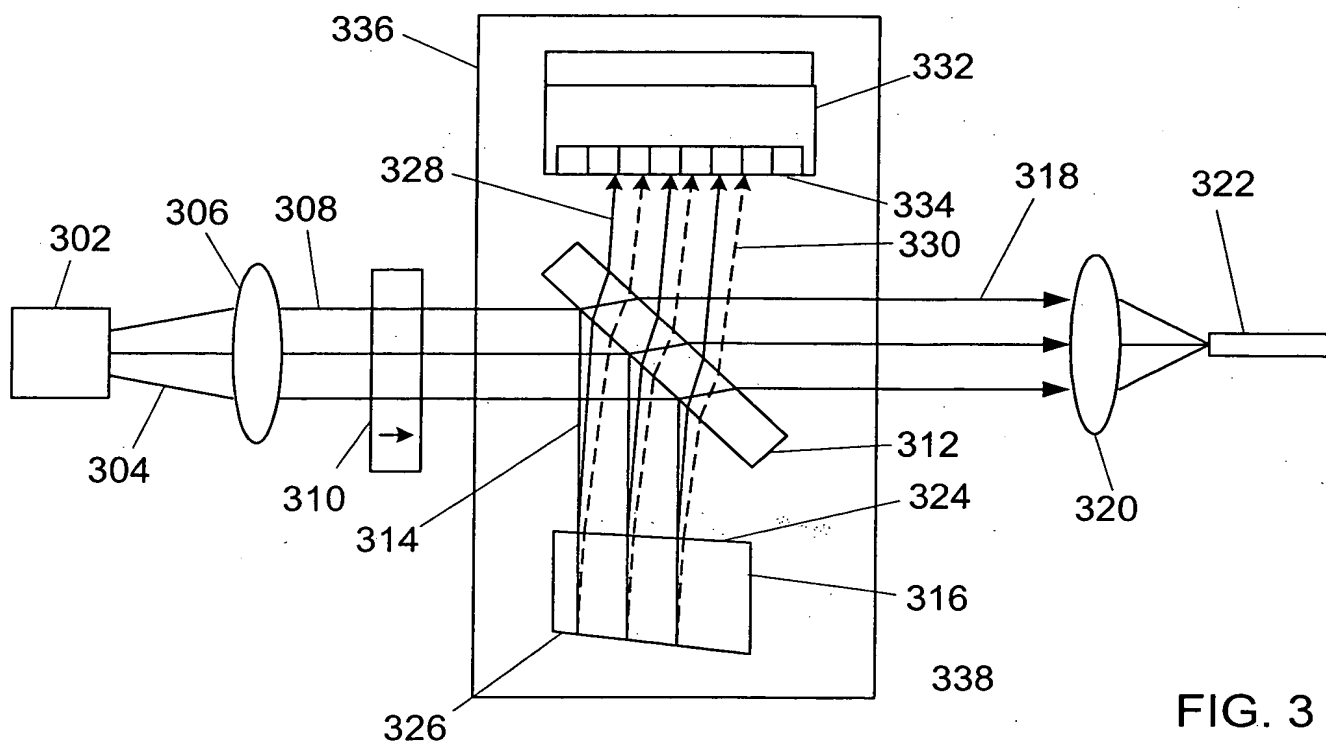


FIG. 3

1. The first step is to determine the initial conditions of the system. This involves identifying the initial position, velocity, and acceleration of the mass.

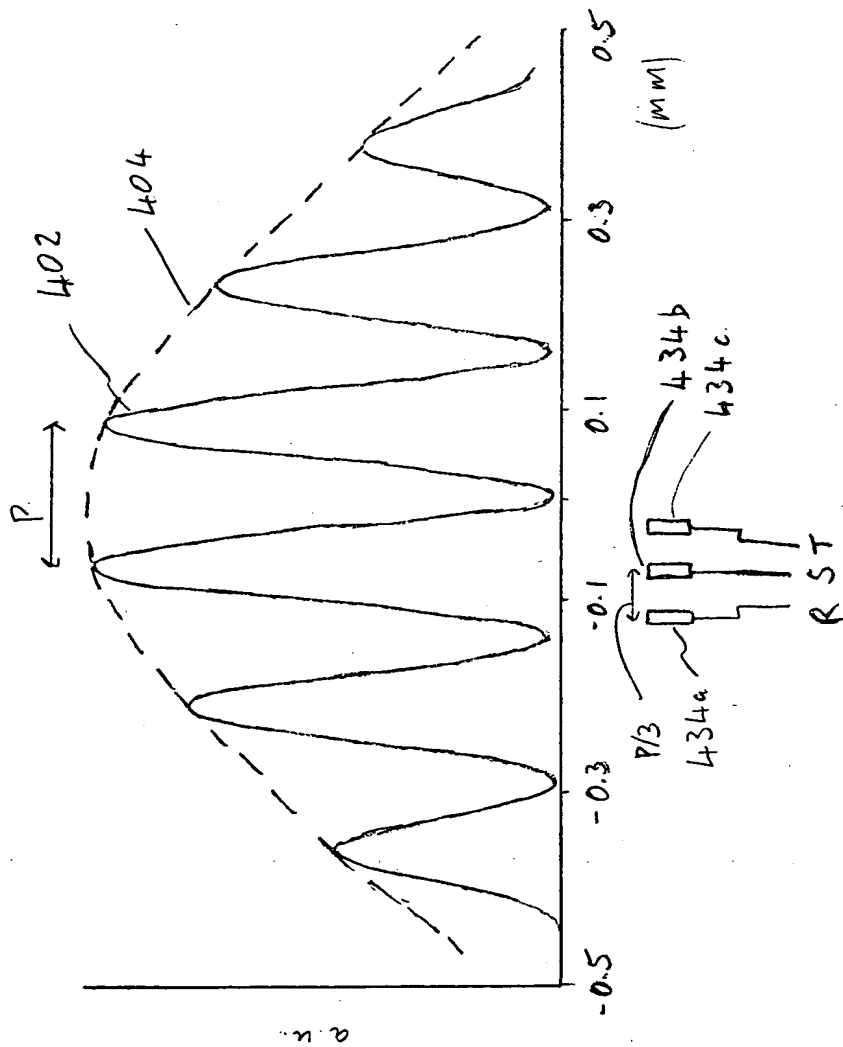


FIG. 4

12
10
8
6
4
2
0
-0.5 -0.4 -0.3 -0.2 -0.1 0 0.1 0.2 0.3 0.4 0.5
position [mm]

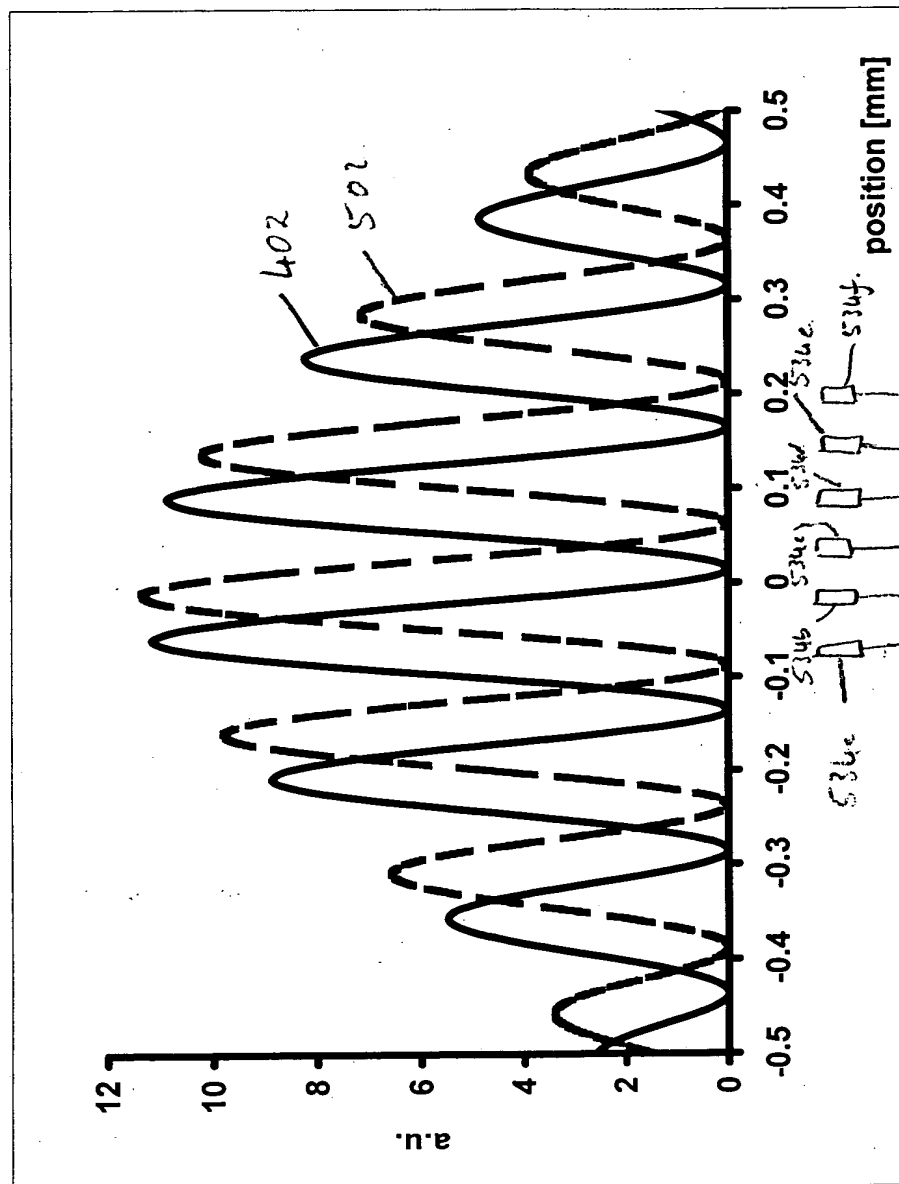


FIG. 5.

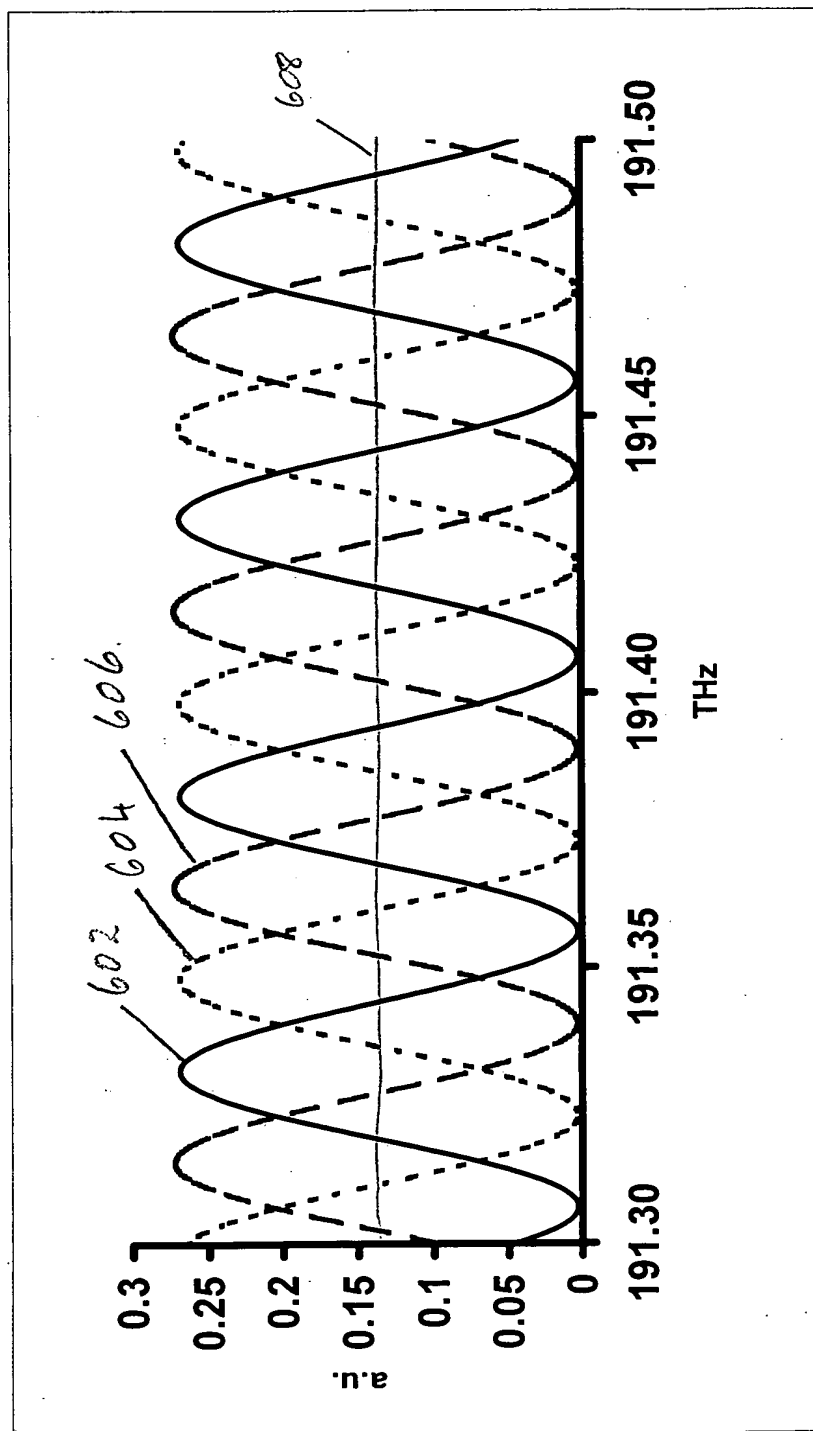


FIG. 6

Phase signals 706 704 702

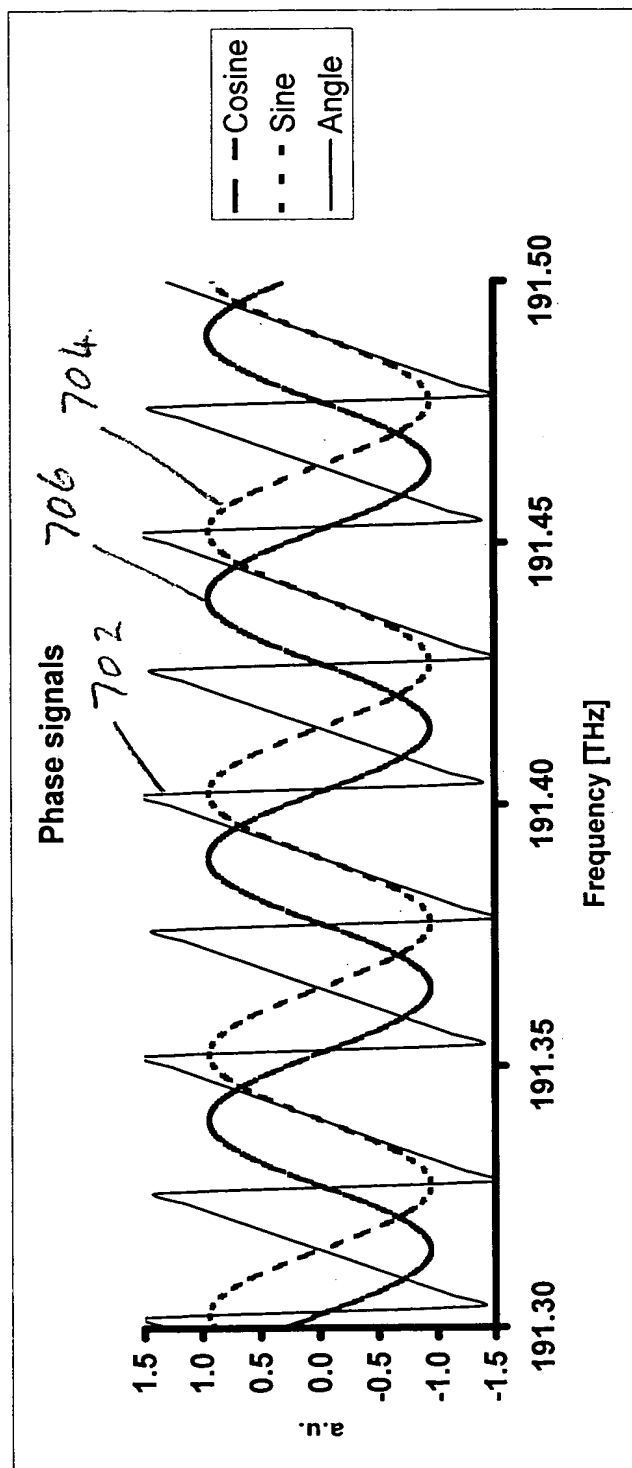


Fig. 7

FIG. 8 is a graph showing the magnitude and phase of the feedback signals as a function of frequency. The magnitude is plotted in dB on the y-axis, and the frequency is plotted in GHz on the x-axis. The magnitude curve (solid line) shows a resonance peak at approximately 191.41 GHz. The phase curve (dashed line) shows a corresponding phase shift around this frequency.

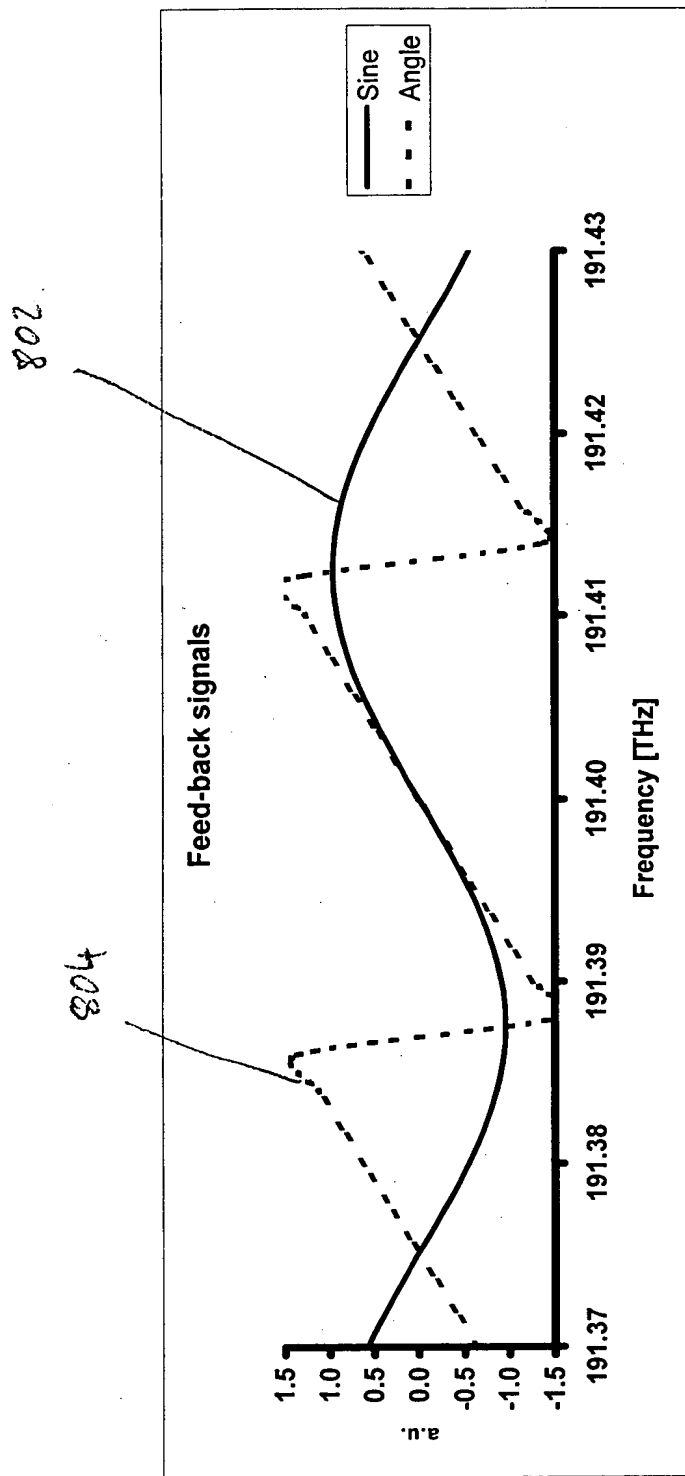


FIG. 8

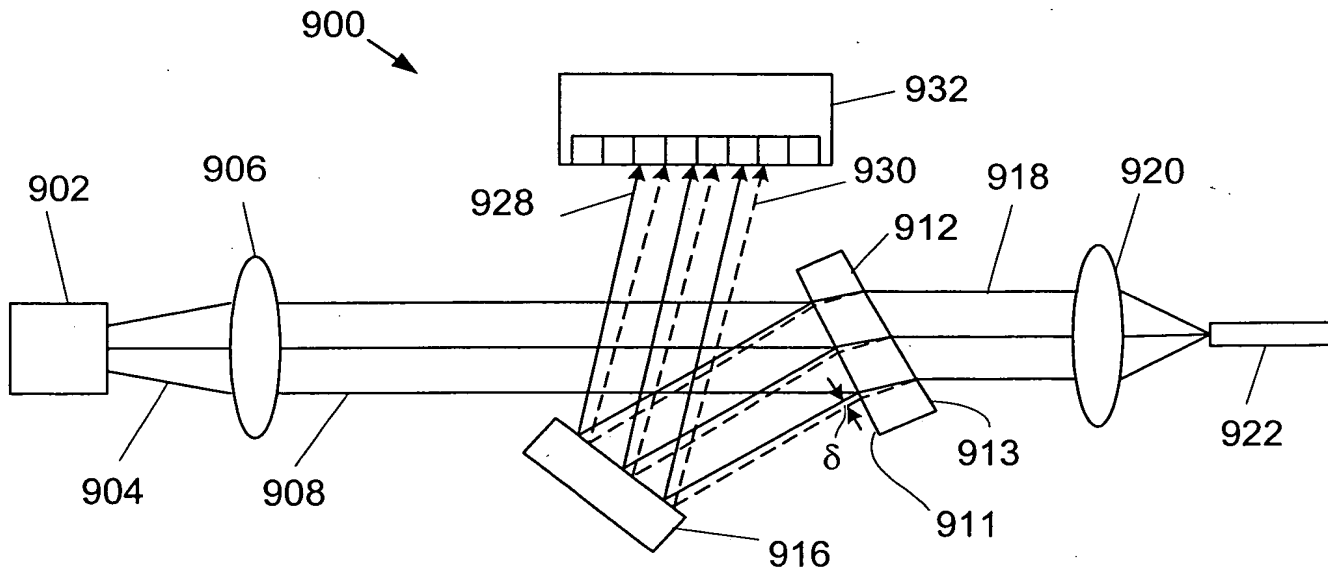


FIG. 9

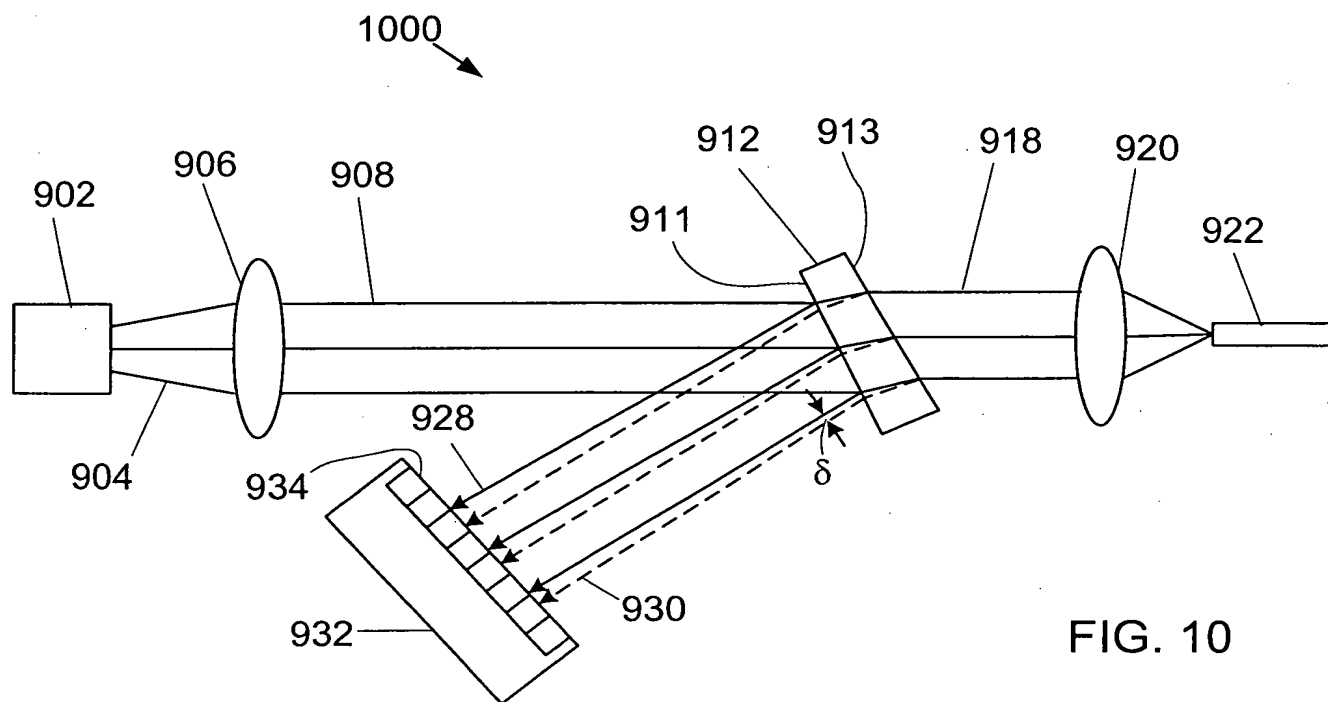


FIG. 10

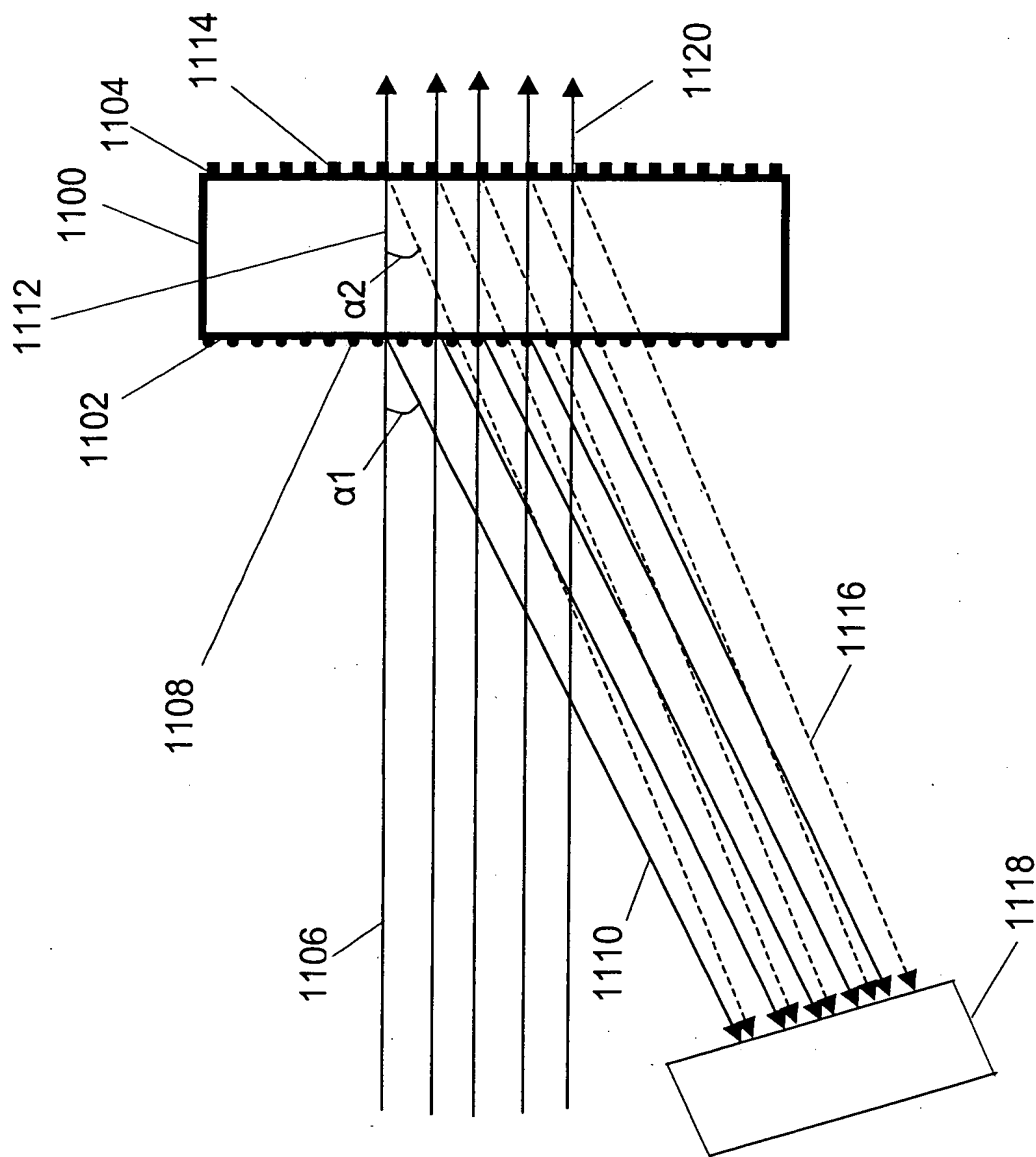


FIG. 11

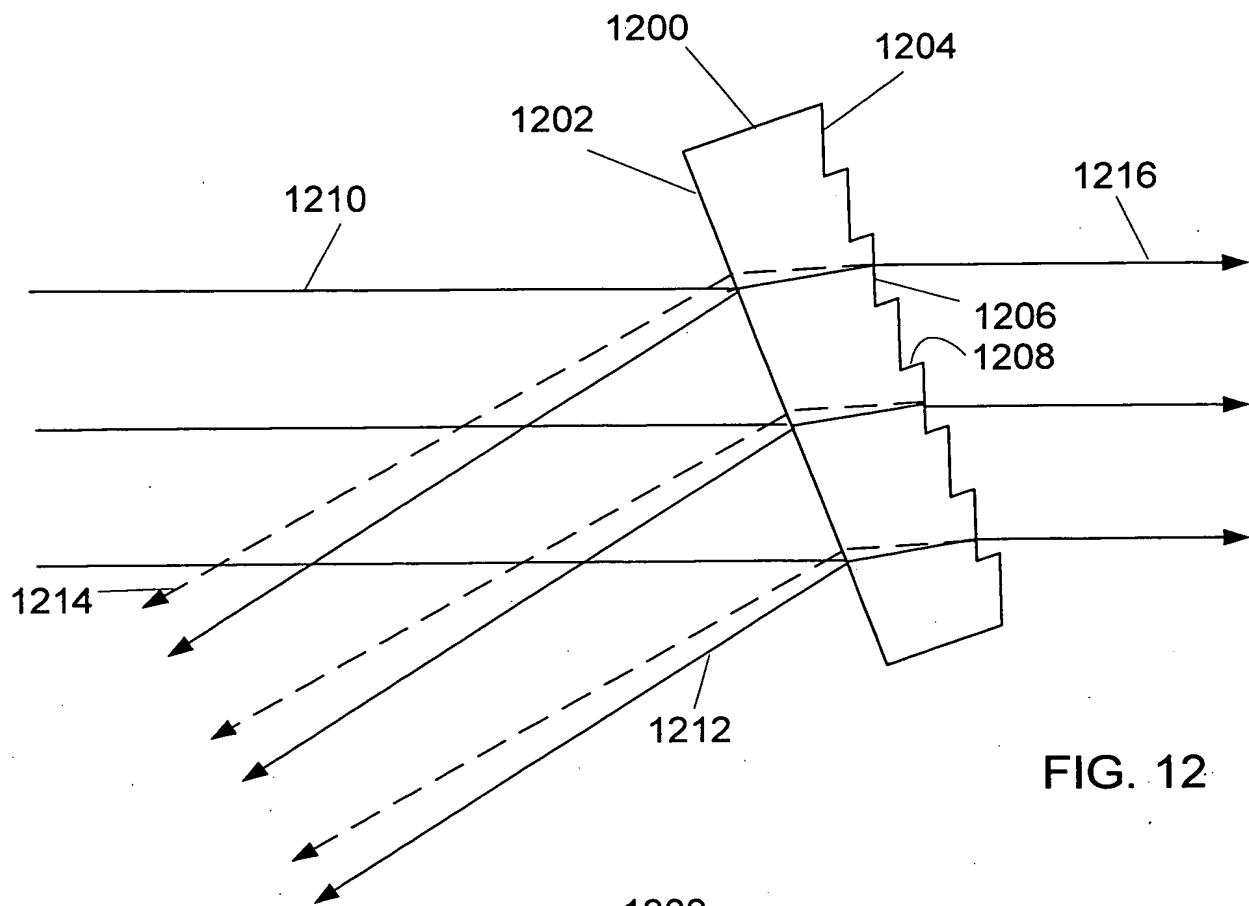


FIG. 12

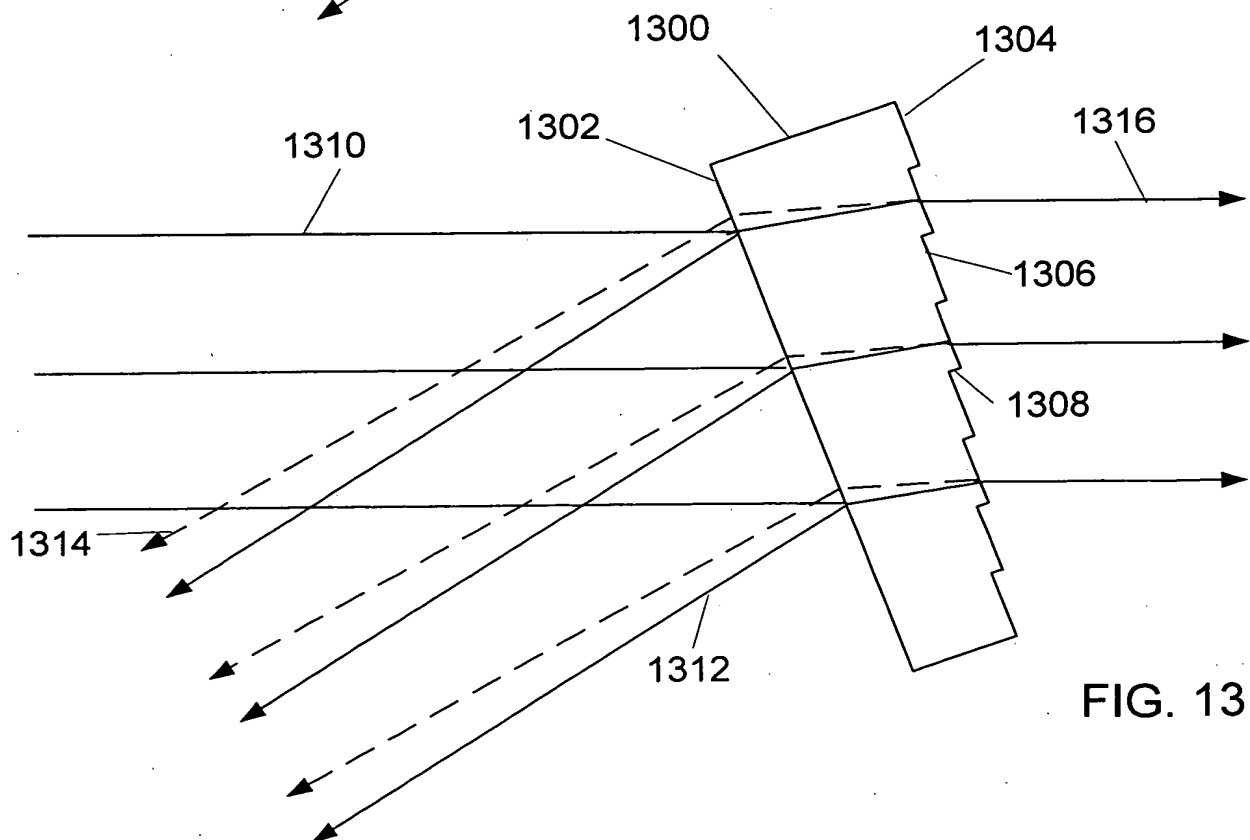


FIG. 13